

### **REMARKS/ARGUMENTS**

Applicant wishes to extend sincere thanks to the Examiner for the kindness afforded Applicant in providing Applicant with a face-to-face interview on October 15, 2003. During the interview, the Examiner graciously provided the Applicant with a request for additional data indicative of unexpected results. Applicant greatly appreciates the Examiner's help in ascertaining additional data which may be used to expedite the prosecution of the present application. Applicant has made every attempt herein to incorporate the Examiner's suggestions.

In the present Office action, claims 15-25 were examined. Claims 15-25 were rejected. Claims 15 and 25 have been amended in accordance with the Examiner's instructions and suggestions. No new matter has been added. Claims 15-25 are now believed to be in condition for allowance.

#### **Claim Rejections under 35 U.S.C. 103**

The Examiner rejected claims 15-25 as being unpatentable over various combinations of EP 594509, USP 5,540,791 to Matsuo et al., or USP 2,336,512 to Stroup. The Examiner notes that by overlapping the disclosed features of the above cited prior art, it would have been obvious to one skilled in the art to have selected the overlapping portion of the subject matter disclosed by the present invention. The Examiner therefore notes that the burden is on the Applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claim product.

Applicant's argument with respect to the non-obviousness of the present invention have been expressed in considerable detail in prior amendments and do not bear additional repetition herein. Rather, Applicant wishes herein to emphasize the non-obvious nature of the present invention as claimed through the recitation and production of additional test data as specifically requested by the Examiner during the interview of October 15, 2003.

Specifically, Applicant discloses Exhibit A as follows:

Charge	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Be	V
2a	2.31	0.08	<0.001	0.75	5.65	<0.001	0.003	0.12	0.0042	0.016

Charge	Be content [ppm]	V content [wt%]	Time until dross formation [h]
2a	42	0.016	71

Exhibit A consists of two entries, the first corresponding to a line in Table 1 of the present application at page 4, and the second corresponding to an entry in Table 2 of the present application, also at page 4. As noted in the Examiner's comments in the Interview Summary of October 15, 2003:

- "Discussed experimental data (Tables 1 and 2 of application). Examiner Ip requested data indicative of unexpected results. Specifically, Examiner Ip requested batch 2 data wherein the V content is approximately .015% wt and the Z content approximately .002. ...".

Therefore, Exhibit A consists of the requested data. Specifically, the data is a slight variation on line 2 of Tables 1 and 2 of the present application wherein the amounts of vanadium and zinc are in keeping with the Examiner's request. As can be observed, the amount of each element comprising the aluminum alloy melt recited for batch 2a is approximately equivalent to that recited in batch 2 of Tables 1 and 2 of the present application with the exception of the amount of vanadium and zinc. In batch 2a, the amount of vanadium is 0.016% wt in keeping with the Examiner's request of a vanadium content of approximately 0.015% wt, and the amount of zinc is 0.003% wt, in keeping with the Examiner's request for a zinc content of approximately 0.002% wt. The resulting time until dross formation using an aluminum alloy melt of batch 2a is approximately 71 hours. This is roughly equivalent to the time until dross formation of batch 2 wherein the time until dross formation was 63 hours with a vanadium content of only 0.005. Therefore, it is evident that keeping the Be content approximately constant and varying the V content from 0.005 to 0.016, has very little effect on the time until dross formation. However, when an amount of vanadium added is sufficient to fall within the amount recited in claim 15 of the present application, specifically between 0.02 and 0.08 weight by percent, even the addition of Be of only 33 parts per million results in a time until dross formation of a minimum of its 160 hours. It is of note that 160 hours is merely a minimum as the actual test was aborted, or

otherwise interrupted, at the 160 hour mark. In any case, 160 hours is substantially longer than either the 63 or 71 hours experienced in batch 2 and batch 2a.

It is therefore evident that adding an amount of vanadium of at least 0.02 by weight of vanadium produces unexpected results with regards to reducing dross formation in aluminum alloy melts. Specifically, once the 0.02 threshold is crossed, one may substantially lessen the amount of beryllium added to the melt while simultaneously increasing the amount of time until dross formation. As noted in previous amendments, this result of the method of the present invention is both non-obvious and nowhere taught or suggested by any of the above cited prior art, taken alone or in combination.

Therefore, in light of the additional data cited above as Exhibit A, Applicant respectfully traverses the Examiner's grounds for rejection with regards to claim 15. As claims 16-23 depend on claim 15, claim 15 now believed to be in condition for allowance, claims 16-24 are now likewise believed to be in condition for allowance. For the reasons recited above, claim 25 is likewise believed to be in condition for allowance.

At the interview, the Examiner requested the Applicant amend claims 15 and 25 with the language "... melt consisting essentially of ..." followed by the chemical composition of the claimed aluminum alloy melt. Claims 15 and 25 have been so amended in accordance with the Examiner's wishes. As a result, claims 15-25 are believed to be in condition for allowance.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

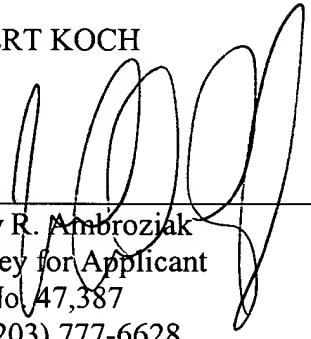
It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

Applicant encloses herewith a check in the amount of \$1720.00 to cover the fee for a three (3) month extension of time request and an RCE application.

If any additional fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,

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Date: December 19, 2003

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on December 19, 2003.

  
Antoinette Sullo